

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-10 (Canceled).

Claim 11 (New): A continuously operated process for the purification by distillation of the methanol used as solvent in the synthesis of propylene oxide by reaction of a hydroperoxide with propylene, with the methoxypropanols as azeotrope with water and the low boilers and high boilers simultaneously being separated off, wherein the solvent mixture obtained in the synthesis is fractionated in a dividing wall column.

Claim 12 (New): The process as claimed in claim 11, wherein the dividing wall column has two side offtakes and methanol is taken off as an intermediate-boiling fraction from one of the side offtakes and the methoxypropanols are taken off as azeotrope with water as the other intermediate-boiling fraction from the second side offtake.

Claim 13 (New): The process as claimed in claim 11, wherein the dividing wall column has from 15 to 60 theoretical plates.

Claim 14 (New): The process as claimed in claim 11, wherein the pressure in the distillation is from 0.5 to 15 bar and the distillation temperature is from 30 to 140°C, with the pressure being measured at the top of the column and the temperature being measured at the side offtakes.

Claim 15 (New): The process as claimed in claim 11, wherein the dividing wall column has from 15 to 60 theoretical plates and two side offtakes and methanol is taken off

as an intermediate-boiling fraction from one of the side offtakes and the methoxypropanols are taken off as azeotrope with water as the other intermediate-boiling fraction from the second side offtake, wherein the pressure in the distillation is from 0.5 to 15 bar and the distillation temperature is from 30 to 140°C, with the pressure being measured at the top of the column and the temperature being measured at the side offtakes.

**Claim 16 (New):** The process as claimed in claim 11, wherein the dividing wall column is configured as thermally coupled columns.

**Claim 17 (New):** The process as claimed in claim 16, wherein three thermally coupled columns are connected in series and the mixture to be fractionated is fed into the first column from which the low boilers are separated off, the methanol is taken off via the side offtake of the second column and the methoxypropanols as azeotrope with water are taken off via the side offtake of the third column from which the high boilers are taken off as bottoms.

**Claim 18 (New):** The process as claimed in claim 16, wherein two columns are each coupled with the column via which the mixture to be fractionated is fed in, with the low boilers being separated off at the top and the methanol being separated off at the bottom of one column and the methoxypropanols as azeotrope with water being separated off at the top and the high boilers being separated off at the bottom of the other column.

**Claim 19 (New):** The process as claimed in claim 16, wherein the column via which the mixture to be fractionated is fed in is coupled with a dividing wall column having a side offtake, with the low boilers being separated off via the top of the feed column, the methanol being separated off at the top, the methoxypropanols as azeotrope with water being separated

off at the side offtake and the high boilers being separated off at the bottom of the dividing wall column.

Claim 20 (New): The process as claimed in claim 16, wherein the liquid stream taken from the bottom of one of the coupled columns is partly or completely vaporized before being passed to the other column, and the gaseous stream taken off at the top of one of the coupled columns is partly or completely condensed before being passed to the other column.

Claim 21 (New): The process as claimed in claim 16, wherein the stream taken from the bottom of one of the coupled columns is partly or completely vaporized before being passed to the other column, or the stream taken off at the top of one of the coupled columns is partly or completely condensed before being passed to the other column.

Claim 22 (New): The process as claimed in claim 11, wherein the propylene oxide is prepared by a process comprising:

- (i) reaction of the hydroperoxide with propylene,
- (ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),
- (iii) reaction of the hydroperoxide which has been separated off in step (ii) with propylene,

with an isothermal fixed-bed reactor being used in step (i), an adiabatic fixed-bed reactor being used in step (iii), a separation apparatus being used in step (ii) and hydrogen peroxide being used as hydroperoxide and the organic compound being brought into contact with a heterogeneous catalyst during the reaction.

Claim 23 (New): The process as claimed in claim 22, wherein the heterogeneous catalyst comprises the zeolite TS-1.

Claim 24 (New): The process as claimed in claim 22, wherein the dividing wall column has two side offtakes and methanol is taken off as an intermediate-boiling fraction from one of the side offtakes and the methoxypropanols are taken off as azeotrope with water as the other intermediate-boiling fraction from the second side offtake.

Claim 25 (New): The process as claimed in claim 22, wherein the dividing wall column has from 15 to 60 theoretical plates.

Claim 26 (New): The process as claimed in claim 22, wherein the pressure in the distillation is from 0.5 to 15 bar and the distillation temperature is from 30 to 140°C, with the pressure being measured at the top of the column and the temperature being measured at the side offtakes.

Claim 27 (New): The process as claimed in claim 22, wherein the dividing wall column has from 15 to 60 theoretical plates and two side offtakes and methanol is taken off as an intermediate-boiling fraction from one of the side offtakes and the methoxypropanols are taken off as azeotrope with water as the other intermediate-boiling fraction from the second side offtake, wherein the pressure in the distillation is from 0.5 to 15 bar and the distillation temperature is from 30 to 140°C, with the pressure being measured at the top of the column and the temperature being measured at the side offtakes.

Claim 28 (New): The process as claimed in claim 27, wherein the heterogeneous catalyst comprises the zeolite TS-1.

Claim 29 (New): The process as claimed in claim 22, wherein the dividing wall column is configured as thermally coupled columns.

Claim 30 (New): A continuously operated process for the purification by distillation of the methanol used as solvent in the synthesis of propylene oxide by reaction of a hydroperoxide with propylene, with the methoxypropanols as azeotrope with water and the low boilers and high boilers simultaneously being separated off, wherein the solvent mixture obtained in the synthesis is fractionated in a dividing wall column, wherein the dividing wall column has from 15 to 60 theoretical plates and two side offtakes and methanol is taken off as an intermediate-boiling fraction from one of the side offtakes and the methoxypropanols are taken off as azeotrope with water as the other intermediate-boiling fraction from the second side offtake, wherein the pressure in the distillation is from 0.5 to 15 bar and the distillation temperature is from 30 to 140°C, with the pressure being measured at the top of the column and the temperature being measured at the side offtakes, and wherein the propylene oxide is prepared by a process comprising:

- (ii) reaction of the hydroperoxide with propylene,
- (ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),
- (iii) reaction of the hydroperoxide which has been separated off in step (ii) with propylene,

with an isothermal fixed-bed reactor being used in step (i), an adiabatic fixed-bed reactor being used in step (iii), a separation apparatus being used in step (ii) and hydrogen

peroxide being used as hydroperoxide and the organic compound being brought into contact with a heterogeneous catalyst during the reaction, wherein the heterogeneous catalyst comprises the zeolite TS-1.